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# Understanding Academic Attitudes Towards the Ethical Challenges Posed by Social Media Research

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## ABSTRACT

In this paper, we outline an online survey-based study seeking to understand academic attitudes towards social media research ethics (SMRE). As the exploratory phase of a wider research project, findings are discussed in relation to the responses of 30 participants, spanning multiple faculties and locations at one international university. The paper presents an empirical measure of attitudes towards social media research ethics, reflecting core issues outlined throughout the nascent Internet-mediated research (IMR) literature, in addition to survey questions relating to familiarity with SMRE guidance, and experience of reviewing SMRE proposals from students and/or as part of the university's research ethics committees (RECs). Findings indicate notable variance in academic attitudes towards the ethical challenges of social media research, reflecting the complexity of decision-making within this context and further emphasising the need to understand influencing factors. Future directions are discussed in relation to the tentative findings presented by the current study.

## Categories and Subject Descriptors

K.4.1 [Computers and Society]: [Public Policy Issues]

## General Terms

Measurement

## Keywords

Research Ethics, Internet-Mediated Research, Social Media, Research Ethics Committees, Institutional Review Boards, Policy

## 1. INTRODUCTION

With social media sites such as Facebook and Twitter continuing to attract hundreds of millions of monthly active users [1, 2], the equally vast amount of personal data produced through these services provide academic researchers with unprecedented opportunity for investigating human behaviour online [3]. Analysis of "big data" sets has enabled researchers to explore social phenomena ranging from voting behaviour in elections [4] and self-censorship of status updates prior to posting [5], to the social transference of emotional states [6] and

accurate prediction of highly sensitive personal characteristics, such as political and religious affiliations, ethnicity, gender, sexuality, and personality [7, 8].

A steadily expanding body of multidisciplinary research has also adapted various "traditional" research methods such as semi-structured interviews, surveys and participant observation to indirectly explore topics such as motivations in driving social media use [9, 10], including the role of personality [11-14], and the expression of risky behaviour online [15-18]. Through a combination of these two broad methodological approaches, a marked increase has been observed in the number of social media research studies published within the social sciences in recent years, rising from a solitary paper produced in 2005 to a cumulative total of 412 by 2011 upon Facebook [19], and from 3 research papers in 2007 to 527 as of 2011 for Twitter [20].

As the study of social phenomena upon social media continues to increase, so too has the need to understand how academic researchers are addressing the various ethical challenges that are posed by research within this relatively novel environment. Numerous sets of ethical guidelines and recommendations for Internet-mediated research have emerged in recent years [e.g. 21, 22, 23], identifying some of the key ethical issues facing researchers wishing to use social media. However, comparatively little is known about researcher attitudes towards these issues, and how they may translate into experiences of reviewing research ethics proposals submitted by students and fellow academics.

Given the 'bottom-up', researcher-led perspectives adopted within the guidelines published by the Association of Internet Researchers [AoIR: 21, 23] and British Psychological Society [BPS: 22], social media researchers and members of university ethics committees are faced with making challenging, context-specific decisions with respect to judging the ethical appropriateness of Internet-mediated research proposals [3]. Given that members of these ethics review boards may struggle with some of the ethical nuances associated with the emerging field of social media research [24], and in particular studies involving the use of "big data" [25], there is a pressing need to try and understand the attitudes and levels of awareness of academics tasked with this responsibility.

The current paper presents preliminary insights into the attitudes and experiences of a small cohort of academics within a single university, representing the initial piloting phase of a wider study. The following section now turns to provide greater detail on the specific ethical issues presented by social media research, as outline throughout the existing bodies of literature.

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## 2. RELATED WORK

Initially developed within the context of biomedical research, the core principles of research ethics and the ethical treatment of persons are represented throughout a number of landmark policies and guidelines, including the Nuremberg Code, the Declaration of Helsinki, the National Research Act of 1974, and the Belmont Report. As outlined by Markham and Buchanan [23], *“the basic tenets shared by these policies include the fundamental rights of human dignity, autonomy, protection, safety, maximization of benefits and minimization of harms, or, in the most recent accepted phrasing, respect for persons, justice and beneficence.”* (p. 4). These principles are further instantiated through discipline-based guidelines including the Association for Computing Machinery’s (ACM) “Code of Ethics and Professional Conduct” [26] and the British Psychological Society’s (BPS) “Code of Human Research Ethics” [27], in particular emphasizing the personal and professional responsibilities of researchers.

Following from these sets of codes and principles, universities have implemented Institutional Review Boards (IRBs), or Research Ethics Committees (RECs) in the UK, to review the ethical appropriateness of research study proposals involving human participants within the institution. Indeed, according to the BPS [27], RECs are responsible for ensuring that ethics reviews are conducted in an independent, competent, transparent and timely manner, providing useful feedback and expertise, and ensuring the protection of both researchers and research participants. Despite significant growth in the ethical regulation of research conducted within UK HEIs, and in particular in the social sciences [28, 29], some have questioned the ethics of ethics committees themselves in undermining the freedom and responsibilities of researchers [28], whilst others have argued that humanities and social sciences research simply does not pose the same level of harmful risk as biomedical research [29], thus rendering the extent of ethical regulation in this domain unjustified.

Regardless of the issues inherent to the institutional regulation of research ethics via RECs and IRBs, the increasing prevalence of Internet-mediated research in the last decade is forcing committees to adapt to the unique challenges presented by research within the digital domain. Indeed, ethical decision making is already identified as a complex task [23], but Internet-mediated research introduces further issues and “grey areas” [30] that researchers and ethics review committees may be struggling to adequately engage with. In their review of 30 social media research papers involving young people, Henderson, Johnson, and Auld [24] illustrated this point by finding that only eight articles discussed the ethical challenges associated with their research, and with six of these *“couched in terms of what was required by the university ethics committee, not in terms of ethical considerations or issues arising through the research”* (p. 548). Though the authors stop short of labeling the research as “unethical”, they argue that the finding may reflect a limited understanding of social media research-related issues within RECs [24]; a point also echoed by Beaulieu and Estalella [31].

A recent, high profile illustration of this potential issue is provided by the publication of a research study in the Proceedings of the National Academy of Sciences (PNAS) by Kramer, Guillory, and Hancock [6]. Specifically, the research – a joint collaboration between researchers from Facebook, Cornell University and the University of California-San

Francisco – used an experimental design to investigate the transference of emotional states on Facebook, covertly manipulating the presentation of status updates conveying positive and negative affect that almost 690,000 users would receive within their profile newsfeed over the period of one week. With the affective basis of the experimental intervention and apparent lack of informed consent, possibility for withdrawal, or debrief, substantial criticism was subsequently aimed at how the study had been granted ethical approval through Cornell University’s IRB, with some critics pointing out apparent changes in Facebook’s user terms following the study [32] in addition to the aforementioned IRB claimed that they had never reviewed the study, leaving it to Facebook [33].

Though the aforementioned study [6] attracted substantial attention throughout the mainstream press, it is by no means an isolated case of researchers and their respective RECs appearing to underestimate the ethical complexities of social media research. Zimmer [34], for instance, presents a detailed analysis of the numerous ethical issues posed by a study of Facebook user data published by Lewis, Kaufman, Gonzalez, Wimmer, and Christakis [35], titled “Tastes, ties, and time” (T3). In the study, Lewis and colleagues publicly released data collected from the Facebook profiles of 1,700 students sampled across a four-year period at a university in the northeastern United States. Despite attempting to protect the identities of participants by removing names and student identification numbers, and the study receiving ethical approval from the Harvard University IRB, Zimmer [34] was able to successfully breach the anonymity of participants and their institution through combining supplementary aspects of information released in the dataset. Thus, even though the researchers took steps to eliminate privacy violations of the participants’ personal data, and that these were deemed sufficient by the university’s IRB, ethical issues still remained.

Seeking to outline core issues associated with Internet-mediated research (IMR), the AoIR published their first “Ethical Decision Making and Internet Research” document in 2002 [21]. Rather than drawing upon a top-down approach influenced by the type of principles, regulations, and universal norms outlined previously, Ess and AoIR colleagues’ proposal emphasized ethical pluralism, cross-cultural awareness, and a focus on guidelines rather than “recipes”; adopting a more bottom-up stance based upon day-to-day experiences garnered through theoretical, empirical, and field research. Following its application by RECs and IRBs in forming decisions about Internet-mediated research, the AoIR guidelines were subsequently updated by Markham and Buchanan in 2012 to account for more recent developments in the field of IMR, including the subsequent rise of social media [23].

A core point emphasised in this revised proposal [23] continued to be that *“no set of guidelines or rules is static; the fields of Internet research are dynamic and heterogeneous.”* (p. 2), and as such, a bottom-up approach to ethical decision-making helped to account for this. In particular, the AoIR guidelines present researchers with a set of considerations to inform the ethical decision-making process, rather than imposing rigid guidance, or hard and fast answers to ethical challenges [23]. This is an important point, as it has clear implications for the requisite knowledge expected of researchers and ethics committee members likely to encounter social media-related research submissions. Specifically, Markham and Buchanan’s [23] perspective implies that not only do social media researchers need to possess sufficient awareness of the key principles

guiding ethical research in this domain, but so too do members of the RECs and IRBs tasked with reviewing research proposals of this nature.

A key element of this refers to what the AoIR describe as “major tensions” (p. 6) in IMR, and by extension, social media research. First, the authors identify an ongoing debate about human subjectivity in social media research, or more specifically, whether protocols involving only the indirect involvement of individual users require the same level of ethics committee scrutiny as those that do so more directly. As argued by Beaulieu and Estalella [31], indirect ethnographic research conducted within mediated settings raises distinct ethical issues due to the contiguity and traceability of digital information relating to both researchers and participants. In particular, the authors point out that such issues encourage researchers to consider their accountability towards participants, and that the public nature of online interactions have consequences for the former, as well as the latter.

Relatedly, a second tension posed by the AoIR [23] relates to the status of personhood upon social, and queries whether one’s personal data should be considered as an extension of the self, or if it should be treated as a document or text independent of the individual. Indeed, while the value of “small data” detailing rich, lived experiences of individuals upon social media has been emphasized by some over the automated collection of “big data” [25], others have argued that publicly accessible social media content should be treated as documented text, and therefore does not require informed consent from its authors [36].

Additionally, if an aggregated amount of data collected is large enough, the AoIR guidance highlights questions as to the ethical appropriateness of assuming the risk of personal identification is sufficiently reduced. This problematic nature of this assumption has already been introduced with respect to Zimmer’s [34] successful de-anonymisation of the T3 research data set [35], in addition to the controversial practice of using verbatim quotes from participants that can potentially be found within public archives of social media data [30]. Indeed, these issues were touched upon in a set of guidelines published in 2007 by the BPS [37]. Specifically, the BPS identified two key dimensions of importance: *level of identifiability* (i.e. from being anonymous, to being identifiable) and *level of observation* (i.e. being covertly observed, through to explicit consent), with various ethical issues subsumed within the subsequent categories, as illustrated in Table 1.

**Table 1. BPS [37] typology of four types of IMR studies and examples of ten ethical issues raised**

Participants	Identifiable	Anonymous
<b>Recruited</b>	Verifying identity Informed consent Withdrawal Data protection	Levels of control Monitoring the consequences of research Protecting participants and researchers
<b>Unaware</b>	Deception	Understanding of public and private space Debriefing

Reflecting the lower-right quadrant of Table 1, a third tension identified by the AoIR is the public-private distinction, relating to expectations of privacy and whether data shared publicly on social media can indeed be considered as ‘private’. As illustrated

by the findings of both Henderson *et al* [24] and Weller and Kinder-Kurlanda [30], a number of social media researchers appear to argue against the need for an ethics review to be conducted when data is shared within the public domain, working on the assumption that users are aware of participating in public communication. This issue is also highlighted as a key “ethical dilemma” by Henderson and colleagues [24], who emphasise that participant understanding of private and public online behaviour may be particularly compromised amongst young adults, making the issue even more important for researchers interacting with members of this cohort.

Shifting towards more disciple-based guidelines and building upon the aforementioned set produced in 2007 [37], the BPS’ “Ethical Guidelines for Internet-Mediated Research” document [22] further reflects some of the key concerns identified by the AoIR [23]. In particular, the BPS similarly highlight the importance of subjective judgment on the part of the researcher, declaring that the document “*is not intended to provide a ‘rule book’ for IMR*”, and advocating “*a return to ‘first principles’ and an informed application of general ethics principles to the new situation [of Internet-mediated research]*” (BPS, 2013: 2). In particular, the BPS identifies four core ethical principles for members to adhere to: respect for the autonomy and dignity of persons, including issues relating to the public-private distinction, confidentiality, copyright, valid consent, withdrawal, and debriefing; scientific value; social responsibility; and maximizing benefits and minimizing harm.

In recent years, a number of UK-based research groups have emerged within universities to examine the ethical issues associated with social media analysis. For instance, the ESRC-funded Collaborative Online Social Media Observatory (COSMOS) [38] and Citizen-centric Approaches to Social Media Analysis (CaSma)<sup>1</sup> [39] research groups based at Cardiff University and the University of Nottingham, respectively, both adopt clear, person-centered and ethically rigorous approaches to the design of social media research studies. However, with researchers and RECs within universities faced with forming decisions that balance the rights of human participants against the social benefits of research proposals, it is not yet clear as to how aligned these groups are with the perspectives of COSMOS, CaSma [39], and similar research groups.

As discussed in outlining the predominantly “bottom-up” perspectives of some of the most comprehensive existing IMR guidelines [22, 23], a key characteristic appears to be in advocating pragmatic and responsible decision making on the part of the researcher. As remarked by Markham and Buchanan [23], this appears to reflect that “*there is much grey area in ethical decision-making ... Multiple judgments are possible, and ambiguity and uncertainty are part of the process*” (p. 5). With social media adding to the complexity of ethical decision making [30], and research ethics committees seemingly struggling with this [24, 25], the main research questions addressed by the study presented in the current paper were,

RQ1: *How do academics tasked with ethically reviewing research proposals perceive the ethical challenges posed by social media research?*

And additionally,

<sup>1</sup> CaSma is the Horizon Digital Economy Research Institute group that the authors of the current paper are affiliated with.

RQ2: How do attitudes towards social media research ethics (SMRE) relate to experience of reviewing research proposals of this type, and experience of Internet-mediated ethical guidelines and training?

The following section now outlines the findings of a small empirical study of academic attitudes towards SMRE, conducted as the piloting phase of a larger research project to unfold across the coming months.

### 3. DESIGN

#### 3.1 Participants

Participants were 30 academic members of staff employed by a Russell Group university, with the majority of respondents based on the institute's UK-based campuses ( $n = 20$ , 74.1%) and the remainder located internationally ( $n = 7$ , 25.9%;  $n = 3$  undeclared). Participants responded to an email request containing a hyperlink to an online survey, sent via the respective Heads of the institution's 26 School Ethics Committees. The sample comprised of 18 males (64.3%) and 10 females (35.7%;  $n = 2$  undeclared). The median and modal age band of participants was 35 to 44-years-old. All five faculties at the institution were represented in the sample, though particularly Science ( $n = 9$ , 32.1%), Social Sciences ( $n = 5$ , 17.9%), and Medicine and Health Sciences ( $n = 5$ , 17.9%).

#### 3.2 Measures

The online survey used in the study consisted of basic demographic questions (e.g. age, gender, location, current faculty) in addition to three sections of questions measuring experience of reviewing social media research ethics (SMRE) proposals at the institution, experience of SMRE guidance and training, and attitudes towards SMRE. These sections are now described in more detail in the following sub-sections.

##### 3.2.1 Experience of Reviewing Social Media Research Ethics Proposals

For participants indicating that they held the responsibility of reviewing student research ethics proposals, and/or were members of their School Ethics Committee, the online survey asked whether they had experience of reviewing research ethics proposals involving the use of social media, indicating either *Yes*, *No*, or *Other*. Participants were also asked how they would describe their level of confidence in being able to identify ethical issues specifically related to social media research proposals, using a 5-point Likert scale anchored at 1 (*Not at all confident*) and 5 (*Extremely confident*). Participants were also asked how they would describe their experience of reviewing SMRE proposals in relation to "traditional" proposals relating to offline behaviour, using a 5-point Likert scale anchored at 1 (*Significantly easier than reviewing "traditional submissions"*) and 5 (*Significantly harder than reviewing "traditional submissions"*).

##### 3.2.2 Experience of Social Media Research Ethics Guidance and Training

Participants were asked whether they had received any formal training or guidance from their institution in dealing with ethically reviewing social media research proposals, indicating either *Yes*, *No*, or *Other*. The survey also asked participants to indicate whether they were familiar (*Yes/No/Other*) with a number of research ethics documents including their institution's code of research conduct and research ethics document, its specific "e-Ethics" guidance document, the

AoIR's [23] "Ethical Decision-Making and Internet Research" document, and any Internet-mediated research guidelines produced by their specific academic discipline, such as the BPS [22] and ACM [26]. If answering "Yes", participants were asked how useful they found the documents in providing guidance for reviewing social media research proposals, using a 5-point Likert scale anchored at 1 (*Not at all useful*) and 5 (*Extremely useful*).

##### 3.2.3 Attitudes Towards Social Media Research Ethics

In order to measure attitudes towards SMRE, a pool of 12 items was developed that would reflect some of the core ethical issues discussed previously in Section 2. Specifically, 12 statements were constructed, and to be measured using a 7-point Likert scale anchored at 1 (*Strongly disagree*) and 7 (*Strongly agree*), and with a neutral mid-point at 4 (*Neither agree nor disagree*). The specific wording of these statements is found in Table 2, with participants asked to indicate their level of agreement with each using the scale provided. Ethical issues covered by the statements included attitudes towards gaining informed consent (Q1, Q2, Q4, Q7, Q11), the public-private distinction (Q1, Q6, Q7, Q8), anonymity (Q3), withdrawal (Q2), personhood (Q10), and deception (Q12), in addition to more general attitudes towards the relative costs and benefits of ethical decision making when doing social media research (Q4, Q5, Q9).

With the exception of Q2 (*"Individuals must always be informed of their participation in social media research so that they may withdraw from the study"*), all remaining statements were designed so that disagreement (i.e. low scores) would reflect the type of person-centred, ethically-driven attitudes towards social media research adopted by researchers [3, 25, 30] and research groups, such as CaSMa and COSMOS. Though Table 2 presents these statements in their original direction, the composite measure of attitudes towards social media ethics presented in the Results section reversed all items other than Q2, so that higher overall scores would represent greater alignment with the aforementioned person-centred, ethically-driven attitudes towards social media research.

**Table 2. Attitudes Towards Social Media Research Ethics – Item Descriptions**

Items	Item Description
Q1	"There is no need to gain informed consent to do research with an individual's social media data if it is publicly accessible"
Q2	"Individuals must always be informed of their participation in social media research so that they may withdraw from the study"
Q3	"It is very unlikely that individuals will be able to be identified if social media datasets are anonymised"
Q4	"Seeking informed consent from individuals unknowingly involved in social media research typically creates more problems for researchers than are necessary"
Q5	"It is too impractical to expect researchers to apply every ethical consideration associated with human research to studies using social media data"
Q6	"It is the responsibility of individuals to rethink how they use social media if they are unwilling

	for their online public behaviour to be studied by researchers”
Q7	“It is acceptable for researchers to use publicly accessible data on social media without prior informed consent of the individuals who published it”
Q8	“There is no discernible ethical difference between studying the public behaviour of individuals on social media to those in real world public settings”
Q9	“The beneficial outcomes of being able to study human behaviour through social media data typically outweigh the need to inform users of their participation”
Q10	“Studying the publicly accessible social media data of individuals is essentially equivalent to researching document-based text, where human research ethics do not apply”
Q11	“Agreement with the ‘terms and conditions’ of social media sites is sufficient permission for researchers to use data without seeking further consent from users”
Q12	“It would typically be acceptable to provide misleading information about the true purpose of a research study using social media data, so long as the individual was informed at a later stage”

### 3.3 Procedure

Following approval from the relevant Research Ethics Committee associated with the current authors, the lead author sent an invitation email containing details of the study and a hyperlink to the information page of the online survey to Heads of the 26 faculty-based School Ethics Committees throughout the university involved in the research. Specifically, Heads were asked to disseminate the details of the study to academic colleagues upon their School’s ethics committee and/or with the responsibility of reviewing the ethics of undergraduate and/or postgraduate research proposals. Hosted upon the Bristol Online Surveys (BOS) platform, the survey was anonymous, password-protected, and accessed only by the lead author. Both anonymity and withdrawal from the study were ensured by asking participants to provide a unique identifier that could later be quoted, combining their mother’s maiden name with the current time of survey completion (e.g. LISTER1045).

Following the provision of consent, participants were first presented with a brief overview of the various types of social media, based upon the typology proposed by Kaplan and Haenlein [40]. They were then shown a brief section outlining different types of social media research based upon the “What is Internet Research?” section on page 3 of the AoIR’s 2012 guidelines [23]. Participants were presented first with the 12 items measuring attitudes towards SMRE (see Section 3.2.3), followed by questions relating to experience of reviewing SMRE proposals (see Section 3.2.1), and then experience of SMRE guidance and training (see Section 3.2.2). The survey closed with a section asking basic demographic questions (see Section 3.2) and providing debriefing materials about the study, including a link to further information about the research, hosted upon the CaSma research blog [39].

## 4. RESULTS

The majority of participants reported holding the responsibility of reviewing undergraduate and/or postgraduate research ethics proposals ( $n = 26$ , 86.6%). Respondents indicated a wide range of experience, from less than 1 year to more than 10 years, resulting in a median and modal experience of 2 to 3 years in the role (29.2%). Within this role, over two-thirds (70.8%,  $n = 17$ ) reported having ethically reviewed student research proposals that involved the use of social media. Of this sub-group, almost one-third (31.3%,  $n = 5$ ) reported feeling “very confident” about identifying SMRE issues, with a median and modal response of feeling “moderately confident” (50%,  $n = 8$ ). No participants indicated being “not at all confident”. While just over one-third (37.5%,  $n = 6$ ) reported that “there was no noticeable difference between reviewing ‘traditional’ and social media-related submissions”, the modal and median response indicated that precisely half found SMRE proposals “slightly harder” (50%,  $n = 8$ ).

Just over half of the participants reported reviewing research ethics proposals as a member of their School’s Research Ethics Committee (56.7%,  $n = 17$ ), with experience ranging from less than one year to 4 to 5 years, and a median and modal experience of 2 to 3 years in the role (35.3%). Just over three-quarters (76.5%,  $n = 13$ ) of respondents in this role reported having ethically reviewed research proposals involving the use of social media. Of this subset, one-third (33.3%,  $n = 4$ ) again reported feeling “very confident” about identifying SMRE issues, whilst the median and modal response was feeling “moderately confident” (58.3%,  $n = 7$ ). As before, no respondents indicated feeling no confidence at all. Though one-third (33.3%,  $n = 4$ ) reported that “there was no noticeable difference between reviewing ‘traditional’ and social media-related submissions”, the modal and median response indicated that almost three-fifths found SMRE proposals “slightly harder” (58.3%,  $n = 7$ ).

Precisely four-fifths (80%,  $n = 24$ ) of respondents indicated having never received formal training or guidance on handling SMRE proposals, with the remaining one-fifth (20%,  $n = 6$ ) having done so through general ethics training from their university, workshop-based discussions, and through attending presentations and reading articles. Almost all participants reported being familiar with the university’s code of research conduct and research ethics document (96.7%,  $n = 29$ ), with the majority of respondents finding it “moderately useful” (44.8%,  $n = 13$ ) in providing guidance for reviewing SMRE proposals (mean = 2.76; S.D. = 1.02; median and mode = 3).

Familiarity with the university’s specific e-ethics document was more balanced, with only just over half (52%,  $n = 13$ ) indicating an awareness of it. Of this subset, just over half (53.8%,  $n = 7$ ) found it “moderately useful” in providing guidance for reviewing SMRE proposals (mean = 3.31, S.D. = .63), though almost two-fifths also reported it as “very useful” (38.5%,  $n = 5$ ). Relatively few respondents were familiar with either the AoIR [23] guidance (16.7%,  $n = 5$ ) or their own academic discipline’s IMR guidelines (26.7%,  $n = 8$ ).

A number of interesting findings are indicated in Table 3, where the means and standard deviations of responses to each of the 12 Attitudes Towards Social Media Research Ethics (SMRE) items are presented, along with composite levels of disagreement and agreement (slightly, moderately, and strongly combined).

**Table 3. Attitudes Towards Social Media Research Ethics - Means, Standard Deviations, and Agreement (in %)**

Items	Item Description		
	Disagree	Neither Ag. nor Dis.	Agree
Q1	No need for informed consent if SM data publicly accessible		
3.53 (2.19)	60%	3.4%	36.6%
Q2	Informed consent required to enable withdrawal from SM research		
4.47 (2.27)	40%	3.4%	56.6%
Q3	Unlikely that individuals will be identified if SM dataset is anonymous		
3.67 (1.81)	63.3%	6.7%	30%
Q4	Informed consent creates more problems for SM researchers than necessary		
4.17 (1.66)	27.6%	31%	41.4%
Q5	Too impractical to apply all ethical considerations to SM research		
3.47 (1.80)	50%	13.3%	36.7%
Q6	Responsibility is upon individuals if they do not wish to participate in SM research		
4.37 (2.21)	43.4%	0	56.6%
Q7	Acceptable to use public SM data without informed consent		
4.33 (2.01)	43.4%	0	56.6%
Q8	No ethical difference between studying offline and SM behaviour in public spaces		
4.10 (1.97)	46.6%	10%	43.4%
Q9	Benefits of studying behaviour on SM outweigh need for informed consent		
2.97 (1.59)	60%	26.6%	13.4%
Q10	Studying public data on SM is essentially same as studying documented text		
2.97 (1.96)	73.3%	3.4%	23.3%
Q11	User agreement with SM terms and conditions sufficient as informed consent		
3.13 (2.01)	60%	13.4%	26.6%
Q12	Acceptable to deceive SM users in research as long as informed at a later date		
2.63 (1.56)	73.3%	13.3%	13.4%

Many of the responses to items present a complex picture in which respondents appeared to recognise the ethical importance of avoiding deception (Q12) and gaining consent from participants in social media research (Q1, Q2, Q9, and Q11), but also seemed to acknowledge the increased problems facing researchers in doing so (Q4).

Similarly, most respondents disagreed to some extent with the notion that studying public data upon social media was essentially the same as studying documented text (Q10: 73%) and that individuals wouldn't be identified from large datasets if

anonymous (Q3: 63.3%), yet levels of agreement and disagreement were roughly equivocal with respect to the acceptability of using such data without informed consent (Q7), the ethical equivalence of researching in offline and online public spaces (Q8), and the responsibility of users in indicating willingness to participate (Q6).

With standard deviations for each of the 12 Attitudes Towards SMRE items ranging from 1.56 (Q12) to 2.27 (Q2), there appeared to be considerable variance across the responses. Though the restricted sample size meant that exploratory factor analysis was inappropriate as a means of investigating the relationships between items, inter-item correlations were calculated to examine whether statistically significant positive relationships could be found to indicate the measurement of one or more constructs. For 10 of the 12 items, item-total correlations ranged from  $r = .465$  (Q5) to  $r = .804$  (Q10), though the two items of Q8 and Q12 appeared to exhibit notably different item-total correlations of  $r = -.121$  and  $r = .080$ , respectively. Further inspection of the correlation matrix confirmed that Q8 featured only one statistically significant relationship with the remaining 11 items (Q5:  $r = -.384$ ,  $p < .05$ ), and Q12 shared none.

Reliability analysis revealed that Cronbach's Alpha improved from  $\alpha = .837$  for all 12 items, to a good internal consistency of  $\alpha = .889$  when removing Q8 and Q12 to form a 10-item composite measure. The mean score for the resulting measure was 4.39, with a standard deviation of 1.38. To explore the second research question underpinning the study (see RQ2, Section 2), one-way analyses of variance (ANOVAs) were conducted and found no significant differences in scores on the Attitudes Towards SMRE items based on experience of having reviewed SMRE proposals submitted by students ( $F(1,22) = 3.51$ ,  $p = .074$ , n.s.) or as part of their role upon the school ethics committee ( $F(1,15) = .27$ ,  $p = .612$ , n.s.).

Similarly, no significant differences were found based on experience of formal SMRE training or guidance ( $F(1,28) = 2.12$ ,  $p = .157$ , n.s.) or familiarity with the university's e-ethics document ( $F(1,23) = 2.05$ ,  $p = .166$ , n.s.), the AoIR's IMR guidelines ( $F(1,28) = 0.05$ ,  $p = .827$ , n.s.), or any IMR guidance provided by their academic discipline ( $F(1,28) = 1.24$ ,  $p = .275$ , n.s.). Correlational analyses also revealed statistically non-significant relationships between Attitudes Towards SMRE scores and level of experience in reviewing student research ethics proposals ( $r = .09$ ,  $p = .69$ ,  $n = 24$ , n.s.) and reviewing as part of the school ethics committee ( $r = .09$ ,  $p = .73$ ,  $n = 17$ , n.s.). The relationship with level of confidence in being able to identify SMRE issues in both student ( $r = .19$ ,  $p = .49$ ,  $n = 16$ , n.s.) and REC submissions ( $r = .04$ ,  $p = .89$ ,  $n = 12$ , n.s.) was also found to lack statistical significance, although this is not unexpected given the particularly restricted sample sizes involved.

## 5. DISCUSSION

The current paper has outlined the findings of an initial, exploratory phase of a wider research project investigating academic attitudes towards social media research ethics (SMRE). Though the limited number ( $n = 30$ ) of respondents and single institutional source from which participants were sampled significantly restrict the generalisability of the findings, the study nevertheless provides the foundations for a crucial - albeit tentative - discussion of the empirical study of social media research ethics. Indeed, reflecting the apparent rise in



academic research involving social media [19, 20], the study found evidence indicating that most respondents had reviewed an SMRE proposal, whether submitted by undergraduates and postgraduates under their supervision, or as a member of their school's research ethics committee (REC).

With respect to the first research question of how academics tasked with ethically reviewing research proposals perceive the ethical challenges posed by social media research, the study produced a number of interesting findings. For instance, despite the apparent prevalence of social media research submitted for review within the university, relatively few respondents reported having received any formal training or guidance in reviewing research proposals of this nature. Nevertheless, just over two-fifths found their university's general research ethics guidance to be moderately useful in doing so, while just over half were familiar with their institution's "e-ethics" research guidelines, which were also found to be largely helpful. In contrast, relatively few respondents reported being familiar with the comprehensive AoIR guidelines [23] or discipline-based Internet-mediated Research (IMR) guidance exemplified by the BPS [22], and outlined in previously in Section 2.

In terms of attitudes towards some of the core ethical challenges of social media research, as outlined in the aforementioned guidelines and discussed by the likes of Henderson and colleagues [24] and Moreno *et al* [3], a number of interesting points are apparent. In particular, a majority of respondents appeared to indicate an understanding of the need for informed consent and avoidance of deception when doing social media research, in addition to an appreciation that online data may not simply be regarded as text-based documents [cf. 41] and that large, anonymous datasets do not rule out potential violations of participant privacy, as demonstrated by Zimmer [34] in relation to the "T3" study [35]. In respect to these issues, many respondents seemed to convey attitudes aligned with the person-centred perspectives adopted by the likes of the COSMOS [38] and CaSma [39] research groups described in Section 2.

However, attitudes appeared more balanced across the sample with respect to other issues. In particular, similar proportions of agreement and disagreement were found in relation to whether public data necessitates the need for informed consent, whether there are any fundamental differences between studying offline and online public behaviour, and whether seeking informed consent may create more problems for researchers than necessary. The relatively large standard deviations of responses suggest notable variation in attitudes across the sample, and indeed, this may be expected given the complexity of the issues [3, 23] and the broad range of disciplines included in the otherwise limited sample frame. This level of complexity is also reflected in evidence suggesting that many academics find reviewing SMRE proposals slightly more difficult than 'traditional' research proposals within an offline context, though nevertheless remain moderately confident about their ability to successfully detect ethical issues specific to IMR.

With regards to the second research question, no statistically significant relationships were found between attitudes towards SMRE and experience of reviewing research proposals of this type, or experience of IMR ethical guidelines and training. Though no specific hypotheses were offered in the current study, it might have been expected that experience of reviewing social media proposals, attendance of formal SMRE training, or familiarity with SMRE guidelines and principals would be positively related to more person-centred attitudes. In fact, the

test closest to reaching statistical significance indicated greater scores on the attitudes to SMRE scale being reported by respondents with *no* experience of reviewing student social media research proposals compared to those who had (mean = 5.04 vs. 3.93), hinting towards the possibility that the idealistic principles of the person-centred approach to social media research ethics may reduce when presented with the many complexities of practical experience. Given the restricted sample size, however, this possibility would need to be examined further in future studies.

For similar reasons, the study was unable to explore the psychometric structure of the 12 items measuring attitudes towards SMRE, and therefore, whether they represent a single construct (e.g. a person-centred approach to social media research ethics) or multiple facets. However, despite this limitation, reliability analysis and close inspection of the inter-item correlation matrix enabled the identification of two problematic items which, unlike the remaining 10 items which all positively correlated with one another, failed to significantly do so in more than one instance. Following their removal, the subsequent 10-item scale demonstrated very good internal consistency ( $\alpha = .89$ ), which provides a promising foundation for further testing and use of the items as an empirical measure of attitudes towards SMRE in future research. Indeed, it is in this direction that future research conducted by the CaSma research group is to turn, following on from the initial exploratory phase presented in this paper.

In particular, one forthcoming study will use semi-structured interviews to gain greater depth of understanding in attitudes towards SMRE and the apparent gap between familiarity with IMR ethical guidelines and confidence in addressing related issues, building upon both the present study and recent work by Weller and Kinder-Kurlanda [30]. A further study using a revised version of the current online survey will be made accessible to stakeholders across multiple institutions, thus widening the breadth of the sample and enabling greater statistical power to explore some of the relationships proposed, and tentatively addressed in the current study.

Despite a range of comprehensive guidelines and authors interested in social computing increasingly turning their attention towards the ethical challenges posed by the increasingly popular field of social media research, the ways in which academics tasked with integrating these considerations into ethical decision-making do so on a practical basis is still, as yet, relatively unclear. Complementing theoretical work in this area with empirical research seems likely to provide exciting opportunities for better understanding the nuances of ethical decision-making in designing and evaluating social media researching. It is hoped that the current paper will provide a suitable platform from which such discussions and research can continue to flourish.

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